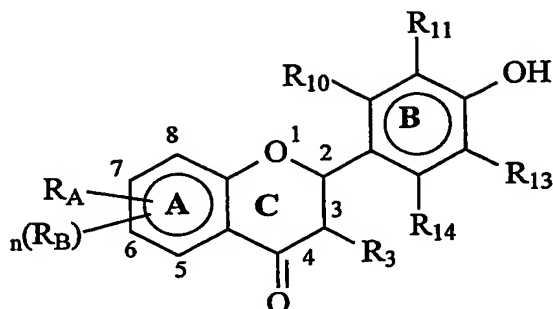


1 **Claims**

2

3 1. A compound of the following Formula 1:



4

5

6

wherein

7

R_A is a C_2 to C_{30} saturated or unsaturated hydrocarbon chain;

8

9

R_{10} , R_{11} , R_{13} , R_{14} and R_3 each independently represent H, OH, a C_{1-6} ether, or a saturated or unsaturated hydrocarbon chain which may be substituted with one or more of nitro, halogen, amino, hydroxyl, ketone or aldehyde group;

14

15

optionally there is a double bond between C_2 and C_3 of the C ring;

17

18

n represents 0 or 1; and

19

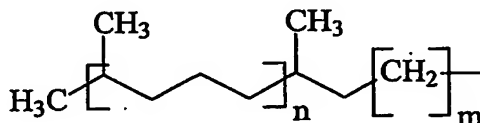
20

R_B is a C_2 to C_{15} saturated or unsaturated hydrocarbon chain, and where R_B is present, R_A and R_B are both C_2 to C_{12} aliphatic alkyl chains.

24

25

- 1 2. The compound as claimed in Claim 1 wherein at
2 least one of R_{10} , R_{11} and R_{13} represents OH.
3
- 4 3. The compound as claimed in Claim 2 wherein R_{10}
5 and/or R_{11} represents OH.
6
- 7 4. The compound as claimed in any one of Claims 1
8 to 3 wherein R_3 , R_{11} and R_{13} all represent OH.
9
- 10 5. The compound as claimed in any one of Claims 1
11 to 3 wherein R_3 , R_{10} and R_{13} all represent OH.
12
- 13 6. The compound as claimed in any one of Claims 1
14 to 5 wherein there is a double bond between C_2
15 and C_3 of the C ring.
16
- 17 7. The compound as claimed in any one of Claims 1
18 to 6 where the backbone of R_A has eight, nine
19 or ten carbon atoms.
20
- 21 8. The compound as claimed in any one of Claims 1
22 to 7 where R_A is attached to position 7 of the
23 A ring of the flavonoid group.
24
- 25 9. The compound as claimed in any one of Claims 1
26 to 8 wherein R_A has the following structure:



27

28

wherein

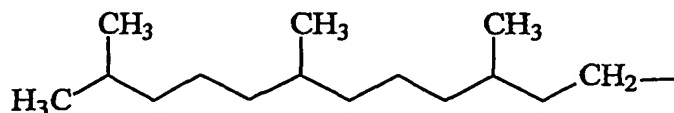
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n is an integer from 1 to 7; and

1 m is an integer from 1 to 7.

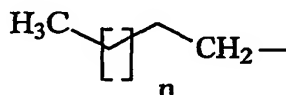
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3 10. The compound as claimed in any one of Claims 1
4 to 8 wherein R_A has the following structure:



5

6 11. The compound as claimed in any one of Claims 1
7 to 8 wherein R_A has the following structure:

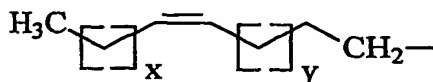


8

9 wherein n is an integer from 2 to 27.

10

11 12. The compound as claimed in any one of Claims 1
12 to 8 wherein R_A has the following structure:



13

14 wherein

15 x is an integer from 1 to 25;

16

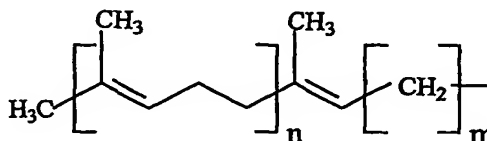
17 y is an integer from 1 to 25;

18

19 and wherein $x + y = 25$ or less.

20

21 13. The compound as claimed in any one of Claims 1
22 to 12 wherein R_A has the following structure:

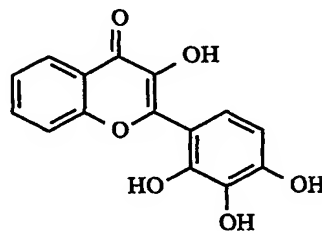
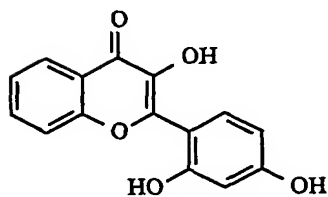
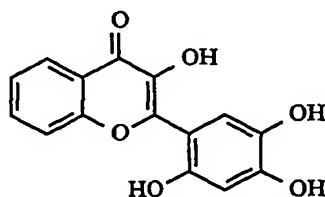
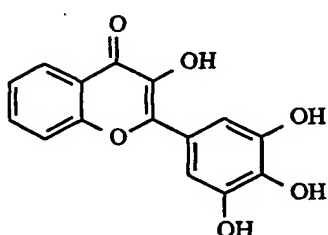


wherein

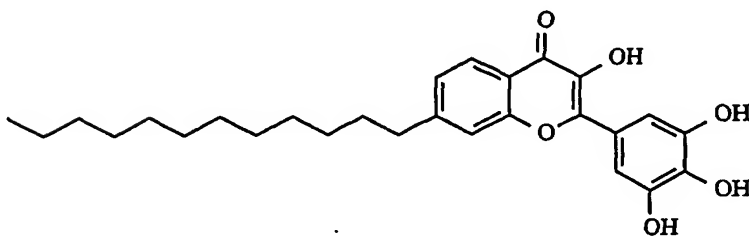
n is an integer from 1 to 7; and

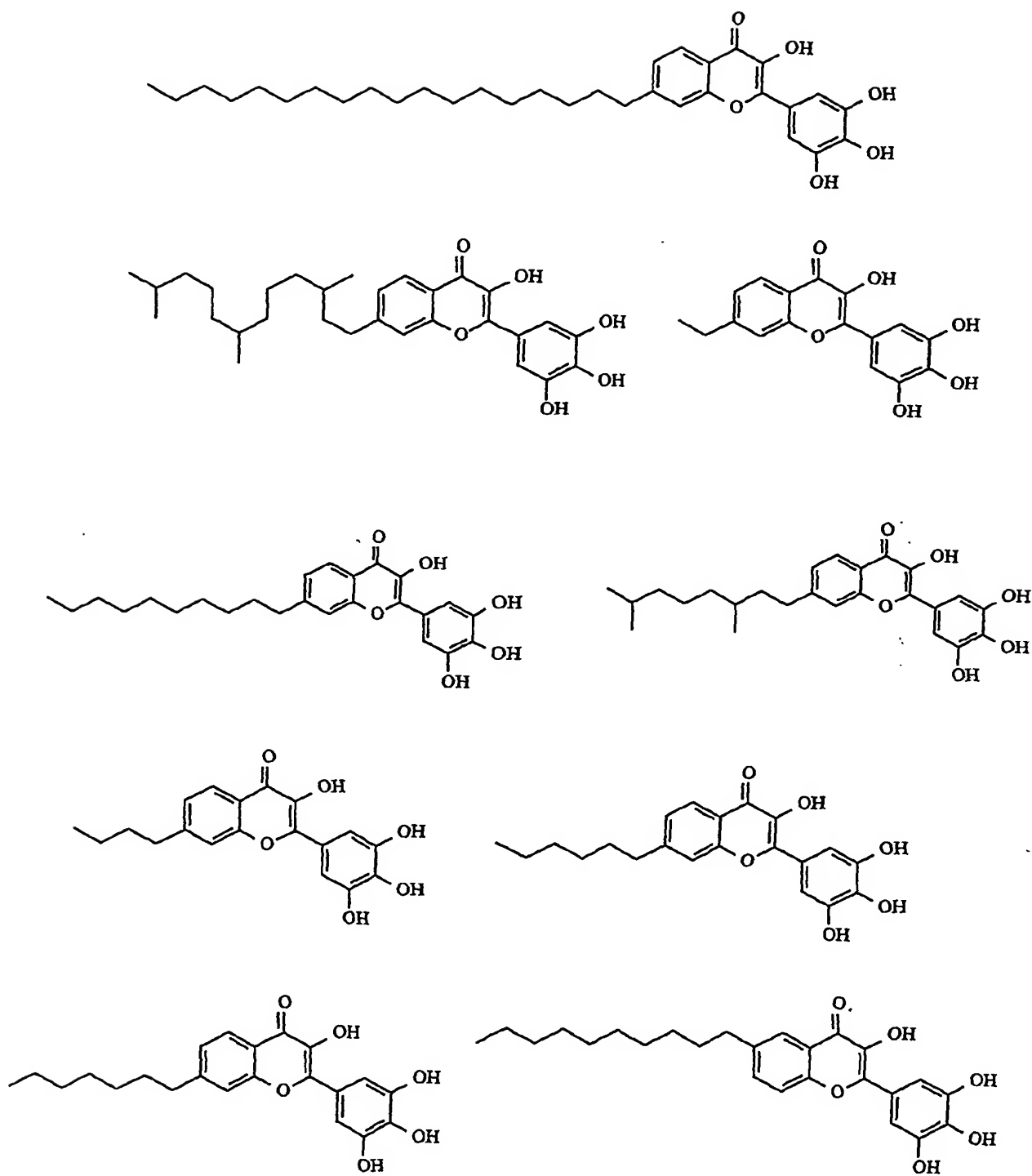
m is an integer from 1 to 7.

14. The compound as claimed in any one of Claims 1 to 13 wherein the flavonoid group has one of the following structures:

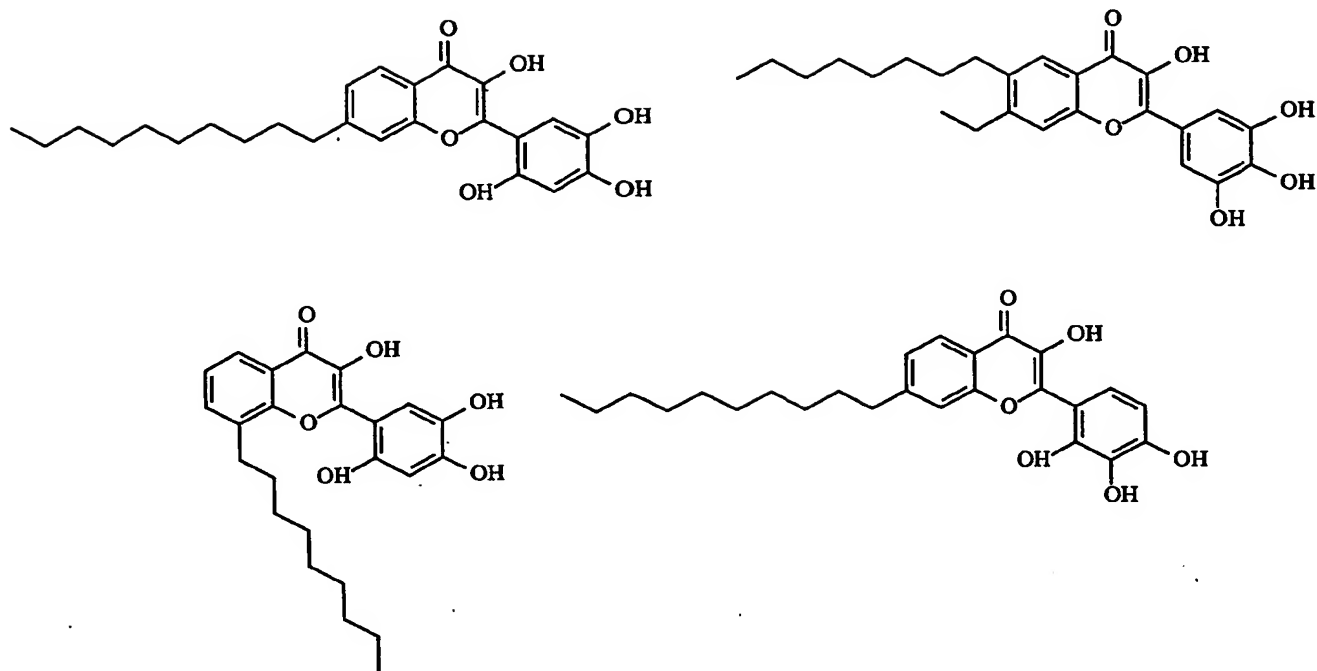


15. The compound as claimed in any one of Claims 1 to 14 having one of the following structures:





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- 1 16. A composition comprising a compound as claimed
2 in any one of Claims 1 to 15 and at least one
3 pharmaceutical excipient or carrier.
4
- 5 17. The composition as claimed in Claim 16 which is
6 a sunscreen.
7
- 8 18. A method of preventing UV damage to the skin of
9 a mammalian animal, said method comprising
10 administering a therapeutically effective
11 amount of the composition of Claim 17 to said
12 skin prior to UV exposure.
13
- 14 19. The method as claimed in Claim 18 wherein said
15 mammalian animal is a human.

- 1 20. The method as claimed in either one of Claims
2 18 and 19 wherein said composition is applied
3 topically to said skin.
4
- 5 21. The composition as claimed in Claim 16 which is
6 a skincare composition.
7
- 8 22. The composition as claimed in Claim 21 further
9 containing emollients and moisturisers.
10
- 11 23. The composition as claimed in either one of
12 Claims 21 and 22 for preventing or reversing
13 the effects of ageing, of reducing apparent
14 wrinkling and/or treating or preventing dry
15 skin.
16
- 17 24. A foodstuff stabiliser composition comprising a
18 compound as claimed in any one of Claims 1 to
19 15.
20
- 21 25. The composition as claimed in Claim 24 in the
22 form of an emulsion having a low fat:high water
23 content.
24
- 25 26. A method of treating a patient having a disease
26 or disorder involving oxidative damage, said
27 method comprising the step of administering a
28 therapeutically effective amount of the
29 composition of Claim 16 to said patient.
30

- 1 27. The method as claimed in Claim 26 wherein said
2 patient is a human.
3
- 4 28. The method as claimed in either one of Claims
5 26 and 27 wherein the disease or disorder
6 involving oxidative damage is selected from the
7 group consisting of cancer, heart disease,
8 neurological disorders, auto-immune disorders,
9 ischaemia-reperfusion injury, diabetic
10 complications, septic shock, hepatitis,
11 atherosclerosis and complications arising from
12 HIV or Hepatitis B.
13
- 14 29. The method as claimed in Claim 28 wherein the
15 disease or disorder is an ischaemia-reperfusion
16 injury or Alzheimer's disease.
17
- 18 30. A prophylactic method of treatment to prevent
19 or reduce the severity of a disease or disorder
20 involving oxidative damage in the tissues of a
21 patient, said method comprising the step of
22 administering a therapeutically effective
23 amount of the composition of Claim 16 to said
24 patient.
25
- 26 31. The method as claimed in Claim 30 wherein said
27 patient is a human.
28
- 29 32. The method as claimed is either one of Claims
30 30 and 31 wherein the disease or disorder
31 involving oxidative damage is selected from the

1 group consisting of cancer, heart disease,
2 neurological disorders, auto-immune disorders,
3 ischaemia-reperfusion injury, diabetic
4 complications, septic shock, hepatitis,
5 atherosclerosis and complications arising from
6 HIV or Hepatitis B.

7

8 33. The method as claimed in Claim 32 wherein the
9 disease or disorder is an ischaemia-reperfusion
10 injury or Alzheimer's disease.

11

12 34. The use of a compound of Formula 1 as claimed
13 in any one of Claims 1 to 15 for the
14 manufacture of a medicament for the treatment
15 of a disease or disorder involving oxidative
16 damage.

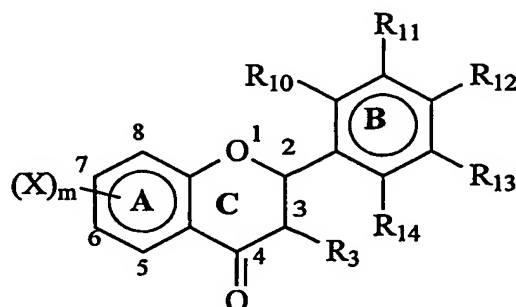
17

18 35. The use as claimed in Claim 34 wherein the
19 disease or disorder is cancer, heart disease,
20 neurological disorders, auto-immune disorders,
21 ischaemia-reperfusion injury, diabetic
22 complications, septic shock, hepatitis,
23 atherosclerosis, and complications arising from
24 an immune response to HIV or Hepatitis B.

25

26 36. A method of manufacturing a compound of Formula
27 1 as claimed in any one of Claims 1 to 15, said
28 method comprising providing an intermediate
29 compound A and an intermediate compound B,
30 wherein intermediate compound A has the
31 structure $R_A M$ wherein M is a metal or metalloid

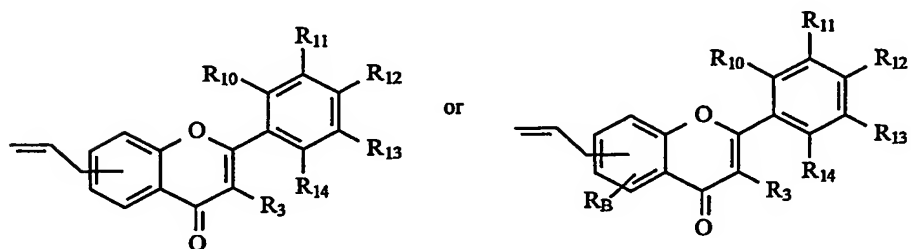
1 group where the metal is directly attached to
 2 R_A , and R_A is a C_2 to C_{30} saturated or
 3 unsaturated alkyl chain, and R_{AM} is capable of
 4 participating in transition metal catalysed
 5 cross-coupling reactions;
 6 and intermediate compound B has the following
 7 structure:



8 wherein
 9 R_{12} represents OH or an O-protecting group
 10 R_3 , R_{10} , R_{11} , R_{13} , and R_{14} each independently
 11 represent H, OH, C_1 to C_4 aliphatic alkyl group
 12 or an O-protecting group where required, and
 13 optionally there is a double bond between C_2
 14 and C_3 of the C ring;
 15 X is a halogen, O-trifluoromethane sulphonate
 16 or any other group used in cross-coupling
 17 reactions; and
 18 $m = 1$ or 2 ,
 19
 20 and reacting intermediate compound A with
 21 intermediate compound B by transition metal
 22 catalysed cross-coupling reactions and
 23 subsequently deprotecting at least one OH
 24 group.

25

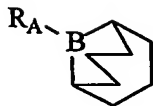
- 1 37. A method as claimed in Claim 36 wherein $R_A M$ is
 2 an organomagnesium, organozinc, organoboron or
 3 organotin compound.
 4
- 5 38. The method as claimed in either one of Claims
 6 36 and 37 wherein the catalyst is a palladium,
 7 nickel or iron complex.
 8
- 9 39. A method of manufacturing a compound of Formula
 10 1 as claimed in any one of Claims 1 to 15, said
 11 method comprising providing an intermediate
 12 Compound C and an intermediate Compound D,
 13 wherein said intermediate Compound C has the
 14 structure $R_A CHCHR$ wherein R_A is as defined in
 15 Formula 1, and wherein intermediate Compound D
 16 has a structure:



17

18

- 19 40. The method as claimed in Claim 39 wherein the
 20 catalyst is:

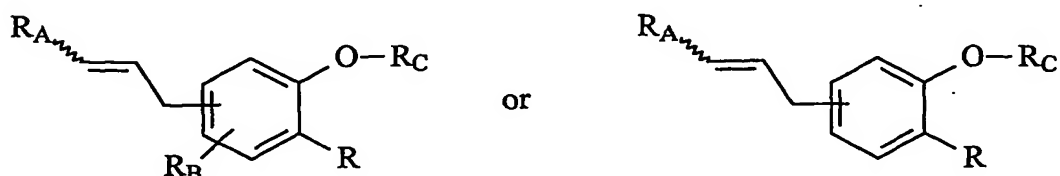


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22

23

- 1 41. A method of manufacturing a compound of Formula
 2 1 as claimed in any one of Claims 1 to 15, said
 3 method comprising providing an intermediate
 4 Compound E of formula:



5

6

7 and constructing a flavonol core on said
 8 intermediate Compound E.

9

- 10 42. The method as claimed in Claim 41 wherein said
 11 flavonol core is formed by Algar-Flynn-Oyamada
 12 (AFO) oxidation.

13

- 14 43. The method as claimed in Claim 41 wherein said
 15 flavanol core is formed by Baker-Verkataraman
 16 rearrangement.

17

- 18 44. The method as claimed in any one of Claims 40
 19 to 43 wherein said intermediate Compound E is
 20 formed by a transition metal catalysed cross-
 21 coupling reaction.

22

- 23 45. The method as claimed in any one of Claims 40
 24 to 43 wherein said intermediate Compound E is
 25 formed by alkene cross-metathesis.